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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/621,379

07/18/2003

Peter Flohr

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EXAMINER

COOLEY, CHARLES E

ART UNIT

PAPER NUMBER

1723

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/07/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/621,379

Applicant(s)

FLOHR ET AL.

Examiner

Charles E. Cooley

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-15, 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s), _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-15, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

OFFICE ACTION AFTER RCE

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 14 DEC 2006 has been entered.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. § 119, which papers have been placed of record in the file.

Specification

- 3. The abstract is acceptable.
- 4. The title is acceptable.

Claim Rejections - 35 U.S.C. § 112, first paragraph

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which

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it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. The specification is objected to under 35 U.S.C. § 112, first paragraph, as the specification, as originally filed, does not provide support for the invention as is now claimed.

Newly presented claim 18 is not supported by the originally filed specification. The specification does not place conditions on when the impulse is introduced. Page 2 that Applicant refers to in the remarks discusses breakdown of vortices and forming a return flow as a function of vortex generator geometry, not a condition that mandates introduction of an axial impulse. The remainder of the specification was reviewed, yet the instant specification is considered silent regarding the subject matter of claim 18.

7. Claim 18 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. **Claims 10-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Chyou (US 5,829,967).**

In light of Applicant's clarification on the record on the disputed term "impulse", the patent to Chyou '967 discloses (at col. 1, line 65 through col. 2, line 5; col. 2, lines 55-68; col. 3, lines 1-30; col. 5, lines 12-17; col. 6, lines 27-67; col. 7, lines 1-13; col. 8, lines 11-20; col. 8, lines 44-67; col. 9, lines 1-8; and col. 9, lines 57-63 - these column and line references are given rather than reproducing the text as a courtesy since Applicant persists in complaining about the length of the examiner work product) a method comprising flowing fluid to form a pair of countercurrent vortices (shown just beyond of 154 in Fig. 1) downstream from the trailing edges of vortex generators 9, 9a, the vortex axes of said vortices being in the axis of the main flow; and introducing an axial **impulse** in the zone of the core flow of the forming wake vortices at least approximately in the direction of the main flow via an injection member 151 or by vortex generator 11 seen in Fig. 14; introducing a secondary flow into the core flow of the wake vortex in a targeted manner via the opening of member 151 (Fig. 1) or by bores 22d (Fig. 14); wherein introducing comprises introducing a secondary fluid into the vortex core flow via outlet openings 22d on the vortex generator 11 (Fig. 14); the introducing comprises variably adjustably introducing the throughput of the secondary medium (col. 8, lines 44-50); wherein the secondary medium is a component to be mixed into the main flow (col. 2, lines 55-60).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chyou (US 5,829,967).

Chyou (US 5,829,967) teaches that "[t]he secondary flow in the form of a gaseous and/or liquid fuel has as a rule a substantially smaller mass flow than the main flow" (col. 8, lines 14-16) but does not disclose the particular percentages of claims 15 and 17. With respect to the limitation of the parameter regarding the mass portion of the secondary flow in relation to the main flow which is present in these claims at issue, the examiner has found that the specification contained no disclosure of any unexpected results arising therefrom, and that as such the parameter is arbitrary and therefore obvious. Such unsupported limitations cannot be a basis for patentability, since where patentability is said to be based upon particular chosen parameters or upon

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another variable recited in a claim, the applicant must show that the chosen dimensions are critical. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

With respect to the limitation of the mass portion of the secondary flow in relation to the main flow and in view of the suggestion that the one flow is substantially smaller than the other flow, it would have been obvious to one of ordinary skill in the art to have provided the method of Chyou (US 5,829,967) with the percentages of one flow with respect to the other as recited in the claims which are considered at most optimum choices, lacking any disclosed criticality.

Applicant has the burden of proving such criticality. *In re Swenson et al.*, 56 USPQ 372; *In re Scherl*, 70 USPQ 204. However, even though applicant's modification may result in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art. *In re Sola*, 25 USPQ 433; *In re Normannet et al.*, 66 USPQ 308; *In re Irmischer*, 66 USPQ 314. More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover optimum or workable ranges by routine experimentation. *In re Swain et al.*, 70 USPQ 412; *Minnesota Mining and Mfg. Co. v. Coe*, 38 USPQ 213; *Allen et al. v. Coe*, 57 USPQ 136.

No probative evidence is of record to demonstrate that the percentages of these claims are significant or are anything more than one of numerous percentages a person of ordinary skill in the art would find obvious for purposes of merely changing the flows to obtain different results. *Graham v. John Deere Co.*, 148 USPQ 459.

Response to Arguments

13. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new grounds of rejection.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E. Cooley whose telephone number is (571) 272-1139. The examiner can normally be reached on Mon-Fri. All official facsimiles should be transmitted to the centralized fax receiving number 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Charles E. Cooley
Primary Examiner
Art Unit 1723

2 March 2007